

**IN THE CLAIMS:**

Please amend the claims as follows:

1. (Currently Amended) A computer-implemented method for referencing a plurality of data points, from a collection of data, comprising:  
creating an annotation associated with the plurality of data points;  
creating an edge definition for the plurality of data points comprising information which defines at least two edges that bind the plurality of data points wherein the edge definition comprises a fewer number of data points than the plurality of data points;  
storing the annotation; and  
associating storing the edge definition in association with the annotation in a manner allowing retrieval of the annotation on the basis of the edge definition for a specified set of plurality of data points.
2. (Canceled)
3. (Currently Amended) The computer-implemented method of claim 1, wherein ~~associating the edge definition with the annotation~~ storing the edge definition in association with the annotation in a manner allowing retrieval of the annotation on the basis of the edge definition for a specified set of plurality of data points comprises creating an index for the annotation and storing the edge definition with the index.
4. (Previously Presented) The computer-implemented method of claim 1, wherein the plurality of data points comprises a discontinuous set of data points.
5. (Previously Presented) The computer-implemented method of claim 4, wherein creating the edge definition comprises:  
partitioning the plurality of data points into sections of contiguous data points;  
and

creating an edge definition for each section of contiguous data points, the edge definition for each section containing information which defines one or more bounding edges of the corresponding section.

6. (Previously Presented) The computer-implemented method of claim 1, wherein the edge definition comprises a list of data points defining a horizontal edge and a vertical edge of a two-dimensional array, each data point specified by a row value and a column value.

7. (Previously Presented) The computer-implemented method of claim 1, wherein the edge definition comprises a list of row values and a list of column values, the lists combinable to generate a set of data points defining a horizontal edge.

8. (Previously Presented) The computer-implemented method of claim 1, wherein the plurality of data points comprises at least three dimensions.

9. (Previously Presented) The computer-implemented method of claim 8, wherein the plurality of data points is bound by a surface of a sphere.

10. (Previously Presented) The computer-implemented method of claim 9, wherein the edge definition comprises a point of origin and a radius of the sphere.

11. (Currently Amended) A computer-readable storage medium containing a program which, when executed by a processor, performs operations comprising:

receiving a first selection of data comprising a plurality of data points and spanning at least two columns and at least two rows of an at least two-dimensional collection of data;

creating an edge definition for the first selection of data which defines a horizontal edge spanning the at least two columns and a vertical edge spanning the at least two rows wherein the edge definition comprises a fewer number of data points than the first selection of data; and ~~wherein the edge definition is associated with an annotation created for the first selection of data~~

storing the edge definition in association with an annotation created for the first selection of data, wherein the edge definition is stored in association with the annotation in a manner allowing retrieval of the annotation on the basis of the edge definition for the first selection of data.

12. (Previously Presented) The computer-readable storage medium of claim 11, wherein:

the first selection of data comprises a discontinuous set of data points;

creating an edge definition for the first selection of data comprises partitioning the selection into sections of contiguous data points; and

the edge definition comprises data points which define a horizontal edge and a vertical edge of each section of contiguous data points.

13. (Currently Amended) The computer-readable storage medium of claim 11, wherein the operations storing further comprises:

creating an index for the first selection of data; and

storing the index with the edge definition in the edge definition table.

14. (Previously Presented) The computer-readable storage medium of claim 13, wherein the operations further comprise creating an annotation record comprising the annotation created for the first selection of data and the index.

15. (Previously Presented) The computer-readable storage medium of claim 13, wherein the operations further comprise:

receiving a request for annotations for a second selection of data;

determining if the second selection of data is contained, at least partially, within the first selection of data, based on the edge definition for the first selection of data; and

if so, retrieving the annotation created for the first selection of data, using the index created for the first selection of data and returning the annotation created for the first selection of data.

16. (Previously Presented) The computer-readable storage medium of claim 15, wherein the operations further comprise:

determining if the second selection of data is contained, at least partially, within other selections of data, based on corresponding edge definitions for the other selections of data; and

if so, retrieving annotations associated with the other selections of data, using indexes created for the other selections of data, and returning the annotations for the other selections of data.

17. (Currently Amended) An annotation system, comprising:

an annotation database;

an edge definition table; and

an executable component configured to:

create an edge definition for a selection of data comprising a plurality of data points, the edge definition comprising data points which define one or more bounding edges of the selection of data wherein the edge definition comprises a fewer number of data points than the selection of data,

create an index for the selection of data,

store the edge definition and index for the selection of data in the edge definition table, and

store, in the annotation database, an annotation record comprising an annotation for the selection of data and the index, whereby annotation records contained in the annotation database are retrievable, for a specified set of data points of the selection of data, on the basis of the edge definition.

18. (Previously Presented) The annotation system of claim 17, wherein the edge definition comprises data points which define a three dimensional surface that contains the selection of data.

19. (Original) The annotation system of claim 18, wherein the edge definition comprises a point of origin and a radius of a sphere that contains the selection of data.

20. (Original) The annotation system of claim 17, wherein the executable component is configured to:
- receive, from an application program, a request for annotations associated with a selection of data specified in the request;
  - obtain, from the edge definition table, indexes for edge definitions at least partially containing the selection of data specified in the request;
  - retrieve annotations from the annotation database, using the indexes obtained;
  - and
  - return the annotations retrieved to the requesting application program.
21. (Previously Presented) The annotation system of claim 17, wherein:
- the selection of data spans at least two rows and two columns of data; and
  - the edge definition for the selection of data comprises data points which define a horizontal edge spanning the at least two columns and a vertical edge spanning the at least two rows.
22. (Original) The annotation system of claim 21, wherein the edge definition for the selection of data comprises data points along the horizontal and vertical edges, each data point defined by a row value and a column value.
23. (Original) The annotation system of claim 21, wherein the edge definition for the selection of data comprises a list of row values and a list of column values, combinable to generate data points along the horizontal and vertical edges of the data selection.
24. (Original) The annotation system of claim 21, wherein the executable component is further configured to:
- detect a change to a collection of data within an area of data defined by a stored edge definition; and
  - provide an indication to a user of the change.

25. (Original) The annotation system of claim 24, wherein the change comprises at least one of an insertion of a row, a deletion of a row, an insertion of a column, or a deletion of a column.

26. (Original) The annotation system of claim 25, wherein the executable component is further configured to provide the user with the option of updating the stored edge definition to reflect the change.

27. (Original) The annotation system of claim 25, wherein the executable component is further configured to provide the user with the option of deleting an annotation associated with the stored edge definition.

28. (Original) The annotation system of claim 25, wherein the executable component is further configured to provide the user with the option of viewing an annotation associated with the stored edge definition.